

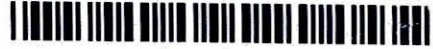


Dart Hawkesbury
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

5008828

D119-646-041
Job Sheet 162452



Part No: D119-646-041

Job Qty: 1 ea

Part Name: AW119 Replacement Skidtube with Wearpads - Fits LH or RH



Part Weight: 0 lbs

Status: Scheduled

Priority: Medium

Job Created: 9/30/17

Job Tracking No:

Due Date: 10/15/17

Created By: Mario Poulin

Type: Stock

Description:

Note: DWG IIN-D119-646 REV D, D3887-041 REV E SHEETS 1,2,5,7,8,10,11 IPP RevA: New issue DD verified by:EC IPP rev B 10.02.22 per PAR 09-043 EC verified by:DD IPP REVC 12.11.05 (DEOD3887-B-1)(ecn 12-675) DD verf:JLM IPP REV:D 13.03.20 per chg003 ECN13-534 DD verf:JLM IPP REV:E 17.05.19 as per dwg D3887 rev.e DD verf:JFS

Ship Via:

Bill of Materials

Part/Part Name	Part Note	Serial No	Quantity	Location
D119-646-041 AW119 Replacement Skidtube with Wearpads - Fits LH or RH	DWG IIN-D119-646 REV D, D3887-041 REV E SHEETS 1,2,5,7,8,10,11 IPP RevA: New issue DD verified by:EC IPP rev B 10.02.22 per PAR 09-043 EC verified by:DD IPP REVC 12.11.05 (DEOD3887-B-1)(ecn 12-675) DD verf:JLM IPP REV:D 13.03.20 per chg003 ECN13-534 DD verf:JLM IPP REV:E 17.05.19 as per dwg D3887 rev.e DD verf:JFS		0.000	
ALS4-1032-130 Rivnut			0.000	
ALS4-1032-225 Rivnut	DWG REV B		0.000	
AN3C4A Bolt			0.000	
AN3C5A Bolt			0.000	
D2500-1-190 Ext'n -1' Beam Tube 4"	DWG REV H		0.000	
D2579 Crossbolt Spacer	DWG REV E IPP E 02.06.17 Now turned on Cobra NG IPP F 07.07.06 rev E dwg EC		0.000	
D2855-3 Cap	DWG REV C IPP RevA: New issue DD verified by:EC		0.000	
D2855-5 Cap	DWG REV C IPP REV:A 17.05.10 NEW ISSUE DD VERF:JFS		0.000	
D3492-5 Plug	DWG REV E IPP Rev:A 11.04.19 per dwg revC DD verf:EC			
D3672-1 Washer, Phenolic	DWG REV D IPP Rev:A New Issue 07-09-09 JLM Verified By:EC IPP Rev:B ECN 1056 07-11-13 DD			
D3681-1 Spacer	DWG REV A IPP Rev A new issue 07-10-30 DD verified by:EC IPP Rev:B Ecn 1056 Rev A dwg DD IPP Rev:C add seq 125 DD 10.05.03 verified by:EC			
D3847-1 Wearpad	DWG REV D SHEETS 1,7 IPP RevA: New issue DD verified by:EC IPP REV:B 14.11.25 AS PER DWG REV.C DD VERF:JLM IPP REV:C 16.03.31 AS PER DWG REV.D DD VERF:JLM			
D3847-11 Wearpad	DWG REV D SHEETS 2,7 IPP RevA: New issue DD verified by:EC IPP REV:B 16.03.31 AS PER DWG REV.D DD VERF:JLM			
D3885-1 Standard Web	DWG REV C IPP RevA: New issue DD verified by:EC			
D3903-1 Spacer	DWG REV B IPP RevA: New issue DD verified by:EC			
MS24694-C52 Screw				
NAS1149C0332R Washer				

Status: Stock

Part: **D119-646-041 B162452**

Created: 9/30/17 11:01 AM DART-MICHAUD-
FEBRILLE VICTORIA



Serial No: **S000024**

Printed By: Goldston, Justin 10/2/17 10:44 AM

DART
AEROSPACE
S008828

Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K64 1K7
CANADA
TEL.: 1 613 632-5200
Email: sales@dartaero.com
www.dartaerospace.com



AW119 Replacement Skidtube with Wearpads – Fits LH or RH

PART NO: D119 – 646 – 041

Revision:

Operation: DC

Change No:

Mfg Date: 11/10/17

Job No: 162452

O-Ring

Job Routing

Op No	Operation	Qty	Due Date	Standard		Workcenter/Supplier	
				Setup hrs	Run Hrs	Workcenter / Supplier	Lead Time
90	Start up Operation	1 Ea	10/15/17	0.00	0.00	Start up container	
100	DC	1 pcs	10/15/17	0.00	0.00	DC	
200	Powdercoat	1 pcs	10/15/17	0.00	0.00	Powdercoat1	4.1428 (0.14)
210	QC	1 pcs	10/15/17	0.00	0.00	QC3	11/11/13
220	HandFinish	1 pcs	10/15/17	0.00	0.00	HandFinish4	0.2652 (3.77)
230	QC	1 pcs	10/15/17	0.00	0.00	QC5	38
240	HandFinish	1 pcs	10/15/17	0.00	0.00	HandFinish4	0.2652 (3.77)
245	QC	1 pcs	10/15/17	0.00	0.00	QC5	
250	HandFinish	1 pcs	10/15/17	0.00	0.00	HandFinish3	0.2652 (3.77)
251	QC	1 pcs	10/15/17	0.00	0.00	QC5	38
260	Packaging	1 pcs	10/15/17	0.00	0.00	Packaging3	9-89
270	QC21-FG	1 Ea	10/15/17	0.00	0.00	QC21	DAS

Part Op 100 - Photocopy bluefile & type labels per PPP D119-646-041 CHG004

Descriptions: 200 - START TIME: 9:10 FINISH TIME: 9:40 - 0.1:300 M138014.

220 - 1-Install inserts as per Dwg D3887.

240 - 1-Install wearpads, gaskets as per Dwg D3887. Put sikaflex in insert before installing bolts and washers

Job BOM

Part / Item	Component Name	Quantity	Operation	Special Comments
D119-646-041 B162452		1 Ea (1 ea)	90-Start up Operation	
ALS4-1032-130	Rivnut 5007389	33 Ea (33 ea)	230-QC	
ALS4-1032-225	Rivnut FM1359482	1 Ea (1 ea)	240-HandFinish	
AN3C4A	Bolt 5000533	6 Ea (6 ea)	240-HandFinish	
AN3C5A	Bolt 5001919	26 Ea (26 ea)	240-HandFinish	
D2855-3	Cap F153291	1 Ea (1 ea)	240-HandFinish	
D3492-5	Plug F162345	24 Ea (24 ea)	240-HandFinish	
D3672-1	Washer, Phenolic F150074	2 Ea (2 ea)	240-HandFinish	
D3847-1	Wearpad F163453-25	5 Ea (5 ea)	240-HandFinish	
D3847-11	Wearpad F155824	1 Ea (1 ea)	240-HandFinish	
MS24694-C52	Screw FM137951	2 Ea (2 ea)	240-HandFinish	
NAS1149C0332R	Washer 5001036	32 Ea (32 ea)	240-HandFinish	
NAS1611-005	O-Ring 5007408	24 Ea (24 ea)	240-HandFinish	

Job Allocations

Operation	Component Part	Required	Inventory	Allocated	Std Qty
90-Start up Operation	D119-646-041 B162452	1	1	0	0
230-QC	ALS4-1032-130	33	0	0	0
240-HandFinish	ALS4-1032-225	1	0	0	0
	AN3C4A	6	0	0	0
	AN3C5A	26	0	0	0
	D2855-3	1	0	0	0
	D3492-5	24	0	0	0
	D3672-1	2	0	0	0
	D3847-1	5	0	0	0
	D3847-11	1	0	0	0
	MS24694-C52	2	0	0	0
	NAS1149C0332R	32	0	0	0
	NAS1611-005	24	0	0	0

Part Specifications

Specifications could not be found.

Work Order Summary

Thursday, September 28, 2017 8:45:54 AM

Page 1 of 2

Criteria : Work Order ID: 162452 Item ID: D119-646-041 Product Family SKIDTUBES
Work Order Start Dates 6/5/2017 to 6/5/2017 11:59:59 PM Work Order Required Dates 6/22/2017 to 6/22/2017 11:59:59 PM
All References
Work Order Status Released

Work Order ID 162452 Required Qty 1.0000 Status Code Released
Item ID D119-646-041 Accepted Qty 0.0000 Scrap Qty 0.0000
Item Name AW119 Replacement Skidtube with Wearpads - Fits LH or RH
Current Acct Value \$2,173.398

Start Date 6/5/2017 Required Date 6/22/2017 Completed Date

Standard ** Actual ** ** Acct. Value ** ** Variance ** ** Variance % **

Direct Costs	Total	Each	Each	Each	Each
Material	\$613.007	\$0.000	\$505.139	\$505.139	100.00%
Labor	\$579.490	\$0.000	\$445.981	\$445.981	100.00%
Outplant	\$0.000	\$0.000	\$0.000	\$0.000	0.00%
Variable Burden	\$0.000	\$0.000	\$0.000	\$0.000	0.00%
Fixed Burden	\$1,144.397	\$0.000	\$956.873	\$956.873	100.00%
Material Burden	\$0.000	\$0.000	\$0.000	\$0.000	0.00%
** Total **	\$2,336.895	\$0.000	\$1,907.994	\$1,907.994	

Item ID/Item Name	Required Qty	Issue Code	Issue Date	Issued Qty	Cost Amount
D2500-1-190					
Ext'n -I' Beam Tube 4"					
	1.0000		9/28/2017	1.0000	\$43.364
	1.0000		6/15/2017	-1.0000	(\$44.175)
	1.0000		6/15/2017	1.0000	\$44.175
D2579					
Crossbolt Spacer					
	2.0000		9/13/2017	2.0000	\$4.387
D2855-5					
Cap					
	1.0000		9/28/2017	1.0000	\$37.433
D3681-1					
Spacer					
	12.0000		9/13/2017	12.0000	\$39.088
D3885-1					
Standard Web					
	1.0000		6/23/2017	1.0000	\$541.764
D3903-1					
Spacer					
	12.0000		9/13/2017	12.0000	\$45.068
Total Matl Amts:					\$711.104

Work Center HandFinish

Employee ID	Rout Seq ID	Labor Date	Setup Hours	Actual Setup Hours	Labor Hours	Actual Labor Hours	Nbr of WOs	Setup Amount	Labor Amount	Fix Burd Amount	Var Burd Amount	Total Amounts
-------------	-------------	------------	-------------	--------------------	-------------	--------------------	------------	--------------	--------------	-----------------	-----------------	---------------

BOUD01

6/20/2017												
120			0.00	0.00	1.40	0.23	6.00	\$0.000	\$5.102	\$12.735	\$0.000	\$17.837
LECO02												
9/21/2017												
190			0.00	0.00	0.88	0.29	3.00	\$0.000	\$6.395	\$15.964	\$0.000	\$22.359
Total:			0.00	0.00	2.28	0.53	9.00	\$0.000	\$11.498	\$28.699	\$0.000	\$40.196

Work Center Skidtubes

Employee ID	Rout Seq ID	Labor Date	Setup Hours	Actual Setup Hours	Labor Hours	Actual Labor Hours	Nbr of WOs	Setup Amount	Labor Amount	Fix Burd Amount	Var Burd Amount	Total Amounts
conw01												
9/5/2017												
140			0.00	0.00	0.98	0.98	1.00	\$0.000	\$25.586	\$49.657	\$0.000	\$75.242
ELLJ01												
9/12/2017												
160			0.00	0.00	1.44	1.44	1.00	\$0.000	\$37.461	\$72.705	\$0.000	\$110.166
9/13/2017												
160			0.00	0.00	1.86	1.86	1.00	\$0.000	\$48.454	\$94.041	\$0.000	\$142.496
9/14/2017												
160			0.00	0.00	1.72	1.72	1.00	\$0.000	\$44.856	\$87.057	\$0.000	\$131.913
grou01												
9/15/2017												
160			0.00	0.00	0.65	0.65	1.00	\$0.000	\$16.819	\$32.643	\$0.000	\$49.463
PATR01												
6/15/2017												
110			0.00	0.00	0.13	0.13	1.00	\$0.000	\$3.289	\$6.383	\$0.000	\$9.672
110			0.00	0.00	0.36	0.36	1.00	\$0.000	\$9.237	\$17.928	\$0.000	\$27.165
6/23/2017												
130			0.00	0.00	2.13	2.13	1.00	\$0.000	\$55.415	\$107.550	\$0.000	\$162.965
9/11/2017												
140			0.00	0.00	2.45	2.45	1.00	\$0.000	\$63.785	\$123.796	\$0.000	\$187.581
whit01												
9/5/2017												
140			0.00	0.00	1.66	1.66	1.00	\$0.000	\$43.287	\$84.012	\$0.000	\$127.299
9/14/2017												
160			0.00	0.00	4.44	4.44	1.00	\$0.000	\$115.407	\$223.983	\$0.000	\$339.389
9/15/2017												
160			0.00	0.00	2.90	2.90	1.00	\$0.000	\$75.573	\$146.672	\$0.000	\$222.245
Total:			0.00	0.00	20.72	20.72	12.00	\$0.000	\$539.168	\$1,046.426	\$0.000	\$1,585.594

Work Order ID 162452

Tuesday, June 06, 2017 4:57:33 PM

162452

Page 1

Item ID: D119-646-041

Accept

N9000040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: AW119 Replacement Skidtube with Wearpads - Fits LH or RH

Start Date: 6/5/2017 Start Qty: 1.00 ***1***

Cust Item ID:

Required Date: 6/22/2017 Req'd Qty: 1.00 ***1***

Customer:

Reference:

Approvals: Process Plan: DAS 21 Date: JUN 08 2017 Tooling: _____ Date: _____
QC: 9-88 Date: _____ SPC (Y/N): _____ Date: _____

Run Start ***NR1***
Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr	Revision Nbr
D3887-041	E
IIN-D119-646	D

100

0.00

100

DC

Memo

0.00

Doc.Control -USB or Paperwork

Photocopy bluefile & type labels per PPP D119-646-041 CHG005

110

0.00

110

Skidtubes

Skidtubes

Memo

0.00

1- inspect Mat'L D2500-1-190 for damage

2-Cut tube to length as per dwg D3887 (154.8")

3- Ensure squareness of ends and scribe batch#

2017/06/15
APD

1 0

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval 		
Description Work Order Deviation				Disposition					
							Completed By		
							Lead hand / Supervisor Approval Verification		
							QC / QA Coordinator Approval		

Root Cause		FAULT CATEGORY					
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐		
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐		
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐		
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐		
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐		
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐		
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐		
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐		
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐		
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐		
Past Expiry Date ☐	Manufacturing Process ☐						
Misidentified ☐	Past Due ☐	OTHER ☐					

Tuesday, June 06, 2017 4:57:33 PM

Page 2

Setup Start *NS1*

Stop ***NS2***

Customer:

Run Start *NR1*

Stop ***NR2***

(X1) 0 20170620
BEB
DAS
18
9-89

1 0 170623
DAS
18
9-89

1 0 170623

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐								
Misidentified ☐	Past Due ☐								
		OTHER :							

Work Order ID 162452

Tuesday, June 06, 2017 4:57:33 PM

162452

Page 3

Item ID: D119-646-041 Accept ***N9000040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: AW119 Replacement Skidtube with Wearpads - Fits LH or RH
Start Date: 6/5/2017 Start Qty: 1.00 ***1*** Cust Item ID:
Required Date: 6/22/2017 Req'd Qty: 1.00 ***1*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130		0.00							
130									
Skidtubes									
Skidtubes									
	Memo	0.00							
	1- Install drill Jig DT9477 drill X-bolt spacer pilot holes using 3/16" drill first side only.								
	2- 2nd side, locating from first saddle holes use DT9861 A/B to drill 2nd side fwd saddle holes.								
	3- 2nd side locating from fwd saddle drill remaining crossbolt spacer holes using DT9477								
	4- Open crossbolt spacer holes to finished size as per dwg D3887 (section D-D and E-E) ***DO NOT OPEN FWD Saddles Holes***								
	5- Deburr, blow out chips from inside of tube.								
	6- Bond web in place as per Dwg D3887 & QSI 015.								
	A/RSikaflex-291 <u>M137526</u>								
	Sikaflex expire date: <u>18-04-21</u>								
	Start: _____ Time: <u>10.10</u>								
	Finish: _____ Time: <u>10.30</u>								
	***** (Adhere for 12 hours) *****								

2017/06/23

AP

2017-06-23

AP

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																													
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval																																																										
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval																																																									
Root Cause		FAULT CATEGORY																																																															
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐	Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐	Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐	Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐	Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐	Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐	Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐	Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐	LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐	Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐	Past Expiry Date ☐	Manufacturing Process ☐	OTHER :			
Misidentified ☐	Past Due ☐																																																																

Work Order ID 162452

Tuesday, June 06, 2017 4:57:33 PM

162452

Page 4

Item ID: D119-646-041 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: AW119 Replacement Skidtube with Wearpads - Fits LH or RH
Start Date: 6/5/2017 Start Qty: 1.00 ***1*** Cust Item ID:
Required Date: 6/22/2017 Req'd Qty: 1.00 ***1*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

135 QC5- Inspect part completeness to step on W/O 0.00

135

QC

Memo

0.00

Quality Control

DAS
18
9-091 0 17-0628

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																													
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval																																																										
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval																																																									
Root Cause		FAULT CATEGORY																																																															
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐	Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐	Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐	Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐	Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐	Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐	Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐	Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐	LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐	Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐	Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____			
Misidentified ☐	Past Due ☐																																																																

Work Order ID 162452

Tuesday, June 06, 2017 4:57:33 PM

162452

Page 5

Item ID: D119-646-041 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: AW119 Replacement Skidtube with Wearpads - Fits LH or RH
Start Date: 6/5/2017 Start Qty: 1.00 ***1*** Cust Item ID:
Required Date: 6/22/2017 Req'd Qty: 1.00 ***1*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
140		0.00							
140									
Skidtubes									
Skidtubes									
	Memo	0.00							
	1- Bend FWD end of tube using bender 1 and FOLIO 31 bend prog. D3887.***Must use bending aid DT9544, ensure proper positioning***								
	2- Cut FWD end of tube as per dwg D3887.***Verify measurment***								
	3- Buff out marks left from bending								
	4- Drill FWD cap holes using DT8215. Open FWD & AFT cap holes to 0.208"								
	5- Open FWD saddle holes to finished size as per dwg D3887								
	6- Drill FWD x-bolt spacer holes using DT9816 and open to finished size.(verify measurement)								
	7- Drill Tow ring hole, using DT10047 locate from FWD saddle hole. (verify measurement). Open to finished size.								
	8- Drill 1.87" and 3.74 holes using DT10045 A&B locate from FWD saddle hole. (verify measurement) as per dwg.								
	9- C'sink FWD cap hole as per detail "C"								
	10- Drill holes for wearpads using DT8931, open to 0.297".								
	11- Countersink crossbolt spacer holes, and prepare tube for welding, deburr.								
	12- Deburr and blow out chips from inside of tube.								

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																													
Date :		Step #:		QTY Effective :			MRB (QS1042) Approval																																																										
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval																																																									
Root Cause		FAULT CATEGORY																																																															
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐	Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐	Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐	Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐	Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐	Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐	Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐	Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐	LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐	Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐	Past Expiry Date ☐	Manufacturing Process ☐	OTHER :			
Misidentified ☐	Past Due ☐																																																																

Work Order ID 162452

Tuesday, June 06, 2017 4:57:33 PM

162452

Page 6

Item ID: D119-646-041 Accept ***N9000040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: AW119 Replacement Skidtube with Wearpads - Fits LH or RH
Start Date: 6/5/2017 Start Qty: 1.00 ***1*** Cust Item ID:
Required Date: 6/22/2017 Req'd Qty: 1.00 ***1*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

150

QC5- Inspect part completeness to step on W/O 0.00

150

QC

Memo

0.00

Quality Control

1 of 17-09-12

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																													
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval																																																										
Description Work Order Deviation				Disposition				Completed By																																																									
								Lead hand / Supervisor Approval Verification																																																									
								QC / QA Coordinator Approval																																																									
Root Cause		FAULT CATEGORY																																																															
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐	Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐	Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐	Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐	Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐	Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐	Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐	Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐	LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐	Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐	Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____			
Misidentified ☐	Past Due ☐																																																																

Work Order ID 162452

Tuesday, June 06, 2017 4:57:33 PM

162452

Page 7

Item ID: D119-646-041 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: AW119 Replacement Skidtube with Wearpads - Fits LH or RH
Start Date: 6/5/2017 Start Qty: 1.00 ***1*** Cust Item ID:
Required Date: 6/22/2017 Req'd Qty: 1.00 ***1*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
160		0.00							
160 Skidtubes	Memo NOTE:TACK IN 2 MOST FWD X-BOLT SPACERS AND TEST FIT FWD GROUND HANDELING FIXTURE,IF FIXTURE FITS WELL THEN PROCEED. FIXTURE DT10091.	0.96							
Skidtubes	1-Insert crossbolt spacers. Weld as per QSI 004 and Dwg D3887. Remember to back drill each hole before welding the other side. Use aluminum rod A/RAluminum Rod <u>ml3 7/13</u>								
	2-Grind cross bolt welds flush as per Dwg D3887. Ensure no pin hole. <u>BE 17-09-14</u>								
	3-Counterbore 5/16" x 0.750" deep as per Dwg D3887. <u>W 17-09-15</u>								
	4- Deburr & Scribe batch # on Aft end of tube.								
	5- Pick D2855-5 cap and transfer drill missing hole. Deburr and identify cap with skidtube batch#.								
170	QC5- Inspect part completeness to step on W/O	0.00							
170 QC	Memo TEST FIT USING FIXTURE DT10091.	0.00							
Quality Control									

DAS
19
9-09

SEP 20 2017

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐
OTHER : _____					

Work Order ID 162452

Tuesday, June 06, 2017 4:57:33 PM

162452

Page 8

Item ID: D119-646-041

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: AW119 Replacement Skidtube with Wearpads - Fits LH or RH

Start Date: 6/5/2017 Start Qty: 1.00 ***1***

Cust Item ID:

Required Date: 6/22/2017 Req'd Qty: 1.00 ***1***

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
180	QC10- Inspect visual per QSI004- ground welds	0.00							
180									
QC	Memo	0.00							
Quality Control									
190	Pressure Wash per QSI005 4.3	0.00							
190									
HandFinish	Memo	0.44							
Hand Finishing	Re-alodine tube as per QSI 005 section 4.1.2.1 do not acid etch.								
200	White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum	0.00							
200									
Powdercoat	Memo	0.00							
Powder Coating	***MASK AREA SHOWN ON SHEET 7, NOTE 9***								
	START TIME: _____								
	OVEN TEMPERATURE: _____								
	FINISH TIME: _____								

1 ~~0~~ SEP 20 2017 DAS 9 9-30① ~~0~~ 2017-09-21 JSL

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																												
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval																																																									
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval																																																								
Root Cause		FAULT CATEGORY																																																														
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐	Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐	Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐	Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐	Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐	Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐	Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐	Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐	LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Misaligned/off center ☐	Misread ☐	Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Turning Sequence ☐	Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____			
Misidentified ☐	Past Due ☐																																																															

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐								
Misidentified ☐	Past Due ☐								
		OTHER :							

Work Order ID 162452

Tuesday, June 06, 2017 4:57:33 PM

162452

Page 10

Item ID: D119-646-041

Accept

N900040100

Setup Start

NS1

Revision ID:

Stop

NS2

Item Name: AW119 Replacement Skidtube with Wearpads - Fits LH or RH

Start Date: 6/5/2017 Start Qty: 1.00 ***1***

Cust Item ID:

Required Date: 6/22/2017 Req'd Qty: 1.00 ***1***

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start

NR1

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop

NR2Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

240

0.00

240

HandFinish

Hand Finishing

Memo

0.00

1-Install wearpads, gaskets as per Dwg D3887. Put sikaflex in insert before installing bolts and washers

A/R Sikaflex-240/-291 _____

Sikaflex expire date: _____

2-assemble o'ring to plug as per dwg D3492 and apply o'ring lube

A/R 55-o'ring lube batch: _____

3 -Inspect for foreign objects as per QSI 024

4 -Install D2855-3 Cap and seal with Sikaflex. Clean excess adhesive.

A/R Sikaflex-240/-291 _____

Sikaflex expire date: _____

5 -Install insert in D2855- Cap.

Install cap and seal with Sikaflex. Clean excess adhesive.

A/R Sikaflex-240/-291 _____

Sikaflex expire date: _____

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
		OTHER : ☐			

Work Order ID 162452

Tuesday, June 06, 2017 4:57:33 PM

162452

Page 11

Item ID: D119-646-041 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: AW119 Replacement Skidtube with Wearpads - Fits LH or RH
Start Date: 6/5/2017 Start Qty: 1.00 ***1*** Cust Item ID:
Required Date: 6/22/2017 Req'd Qty: 1.00 ***1*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
245 *245* QC Quality Control	QC5- Inspect part completeness to step on W/O Memo	0.00 0.00				_____	_____	_____	_____
250 *250* HandFinish Hand Finishing	Wing Walk as per dwg QSI005 4.4 Batch _____ Memo	0.00 0.00				_____	_____	_____	_____
251 *251* QC Quality Control	QC5- Inspect part completeness to step on W/O Memo	0.00 0.00				_____	_____	_____	_____

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition			
				Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : ☐					

Tuesday, June 06, 2017 4:57:33 PM

162452

Page 12

N900040100

Setup Start *NS1*

Stop *NS2*

Stop *NS2*

Cust Item ID:

Customer:

Reference:

Run Start *NR1*

Stop *NR2*

**Insp.
Stamp**

0.00

260

Packaging

Memo

0.00

Packaging

270

QC21- Final Inspection - Work Order Release

0.00

270

QC

Memo

0.00

Quality Control

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition			
				Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : ☐					

Picklist Print

Monday, June 05, 2017 4:53:51 PM

Page 184

Work Order ID: 162452

162452

Parent Item: D119-646-041

D119-646-041

Parent Item Name: AW119 Replacement Skidtube with Wearpads - Fits LH or RH

Start Date: 6/5/2017

Required Date: 6/22/2017

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP RevA: New issue DD verified by:EC IPP rev B
10.02.22 per PAR 09-043 EC verified by:DD IPP REVC 12.11.05
(DEOD3887-B-1)(ecn 12-675) DD verf:JLM IPP REV:D 13.03.20 per
chg003 ECN13-534 DD verf:JLM IPP REV:E 17.05.19 as per dwg
D3887 rev.e DD verf:JFS

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
ALS4-1032-225	AELS8-1032-225	Purchased	No			240	Each	2,967.000	1	1			

ALS4-1032-225******

Rivnut

Location	Loc Qty	Loc Code
CCK007	500	
M136579	500	
FG	25	
M134975	20	
M135998	5	
FP001	2442	
M135603	40	
M135920	38	
M135998	2353	
M136265	11	

Picklist Print

Monday, June 05, 2017 4:53:51 PM

Page 185

Work Order ID: 162452

162452

Parent Item: D119-646-041

D119-646-041

Parent Item Name: AW119 Replacement Skidtube with Wearpads - Fits LH or RH

Start Date: 6/5/2017

Required Date: 6/22/2017

Start Qty: 1.00

Required Qty: 1.00

AN3C4A

Purchased

No

240

Each

820.0000

6

6

AN3C4A

Bolt

**

Location

Loc Qty

Loc Code

FG

20

122814

20

FP001

365

M136450

23

M136740

8

M136986

20

M137075

43

M137164

2

M137361

269

OVER002

400

M137507

150

M137587

250

ST350

35

M135704

35

D2855-5

Manufactured

No

160

Each

10.0000

1

1

D2855-5

Cap

**

M66 17/09/15

Location

Loc Qty

Loc Code

FP001

10

162208

10

D2500-1-190

Manufactured

No

110

Each

18.0000

1

1

D2500-1-190

Ext'n - 1" Beam Tube 4"

**

17-06-15

DI

Location

Loc Qty

Loc Code

HALL

18

151612

18

Monday, June 05, 2017 4:53:51 PM

Shop Packet Print

Page 185

Picklist Print

Monday, June 05, 2017 4:53:51 PM

Page 186

Work Order ID: 162452

162452

Parent Item: D119-646-041

D119-646-041

Parent Item Name: AW119 Replacement Skidtube with Wearpads - Fits LH or RH

Start Date: 6/5/2017

Required Date: 6/22/2017

Start Qty: 1.00

Required Qty: 1.00

D2579 Manufactured No 140 Each 110.0000 2 2

D2579

Crossbolt Spacer

**

BB 170912

Location

Loc Qty

Loc Code

LG001

110

141711

4

162087

106

D2855-3 Manufactured No 240 Each 5.0000 1 1

D2855-3

Cap

**

Location

Loc Qty

Loc Code

FP001

5

151614

4

153291

1

NAS1611-005 Purchased No 240 Each 206.0000 24 24

NAS1611-005

O-RING

**

Location

Loc Qty

Loc Code

FP001

206

m136184

7

m136192

1

m136377

22

m137017

100

m137164

76

D3492-5 Manufactured No 240 Each 88.0000 24 24

D3492-5

Plug

**

Location

Loc Qty

Loc Code

FP001

88

133396

21

155493

29

157341

38

Monday, June 05, 2017 4:53:51 PM

Shop Packet Print

Page 186

Picklist Print

Monday, June 05, 2017 4:53:51 PM

Page 187

Work Order ID: 162452

162452

Parent Item: D119-646-041

D119-646-041

Parent Item Name: AW119 Replacement Skidtube with Wearpads - Fits LH or RH

Start Date: 6/5/2017

Required Date: 6/22/2017

Start Qty: 1.00

Required Qty: 1.00

D3672-1

Manufactured No

240

Each

366.0000

2

2

D3672-1

Washer, Phenolic

**

Location

Loc Qty

Loc Code

FG

10

85222

10

FP001

356

150074

356

D3681-1

Manufactured No

160

Each

223.0000

12

12

D3681-1

Spacer

**

Location

Loc Qty

Loc Code

LG001

223

145956

1

151967

4

155381

1

155806

8

158384

2

160402

207

D3847-1

Manufactured No

240

Each

49.0000

5

5

D3847-1

Wearpad

**

Location

Loc Qty

Loc Code

FP001

49

153503

15

155281

12

155776

18

156958

4

BE17-0912
B164473-R.

Picklist Print

Monday, June 05, 2017 4:53:51 PM

Page 188

Work Order ID: 162452

162452

Parent Item: D119-646-041

D119-646-041

Parent Item Name: AW119 Replacement Skidtube with Wearpads - Fits LH or RH

Start Date: 6/5/2017

Required Date: 6/22/2017

Start Qty: 1.00

Required Qty: 1.00

D3847-11

Manufactured No

240

Each

20.0000

1

1

D3847-11

Wearpad

**

Location

Loc Qty

Loc Code

FP001

20

151986

4

155829

6

157006

2

159114

8

D3885-1

Manufactured No

140

Each

11.0000

1

1

D3885-1

Standard Web

**

Location

Loc Qty

Loc Code

LG002

11

152609

1

156109

10

D3903-1

Manufactured No

160

Each

12.0000

12

12

D3903-1

Spacer

**

Location

Loc Qty

Loc Code

LG001

12

152993

1

157542

11

2017/06/23

8162344 x 12

Picklist Print

Monday, June 05, 2017 4:53:51 PM

Page 189

Work Order ID: 162452

162452

Parent Item: D119-646-041

D119-646-041

Parent Item Name: AW119 Replacement Skidtube with Wearpads - Fits LH or RH

Start Date: 6/5/2017

Required Date: 6/22/2017

Start Qty: 1.00

Required Qty: 1.00

ALS4-1032-130 AELS4-1032-130 Purchased No 220 Each 3,076.000 30 30

ALS4-1032-130

Rivnut

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
FG	50	FG
M135442	50	
FP001	2711	
M133077	3	
M136579	2708	
st555	315	
M136579	315	

AN3C5A Purchased No 240 Each 1,029.000 26 26

AN3C5A

Bolt

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
FG	5	
I22800	5	
FP001	94	
M136182	35	
M136579	2	
M137412	57	
OVER002	800	
M137361	800	
ST350	130	
M134676	1	
M135442	129	

Picklist Print

Monday, June 05, 2017 4:53:51 PM

Page 190

Work Order ID: 162452

162452

Parent Item: D119-646-041

D119-646-041

Parent Item Name: AW119 Replacement Skidtube with Wearpads - Fits LH or RH

Start Date: 6/5/2017

Required Date: 6/22/2017

Start Qty: 1.00

Required Qty: 1.00

NAS1149C0332R

Purchased

No

240

Each

4,145.000

32

32

NAS1149C0332R

WASHER

Location

Loc Qty

Loc Code

FP001

1438

m137381

1438

GA

514

m133284

22

m136444

492

ST260a

2000

m135408

0

m136741

0

m137597

2000

ST266

193

m135908

184

m136741

9

MS24694-C52

Purchased

No

240

Each

48.0000

2

2

MS24694-C52

SCREW

Location

Loc Qty

Loc Code

FP001

44

m135978

44

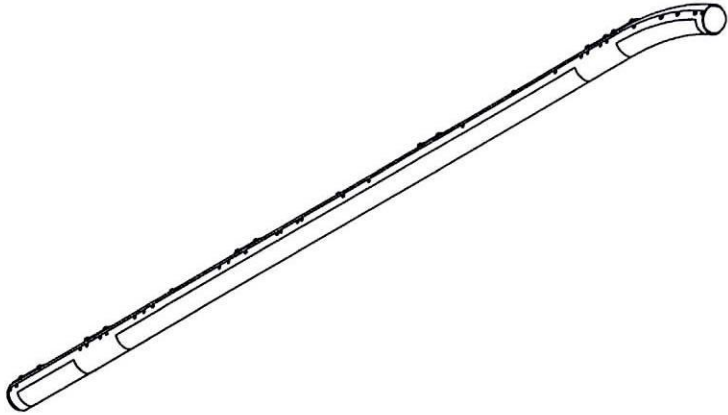
ST285

4

m127059

4

D3887-041 STANDARD SKIDTUBE ASSY WITH WEARPAD(SHOWN)
D3887-043 STANDARD SKIDTUBE ASSY WITH WEARPLATE (SIMILAR)
D3887-045 STANDARD SKIDTUBE ASSY WITH TRAINING WEARPLATE (SIMILAR)



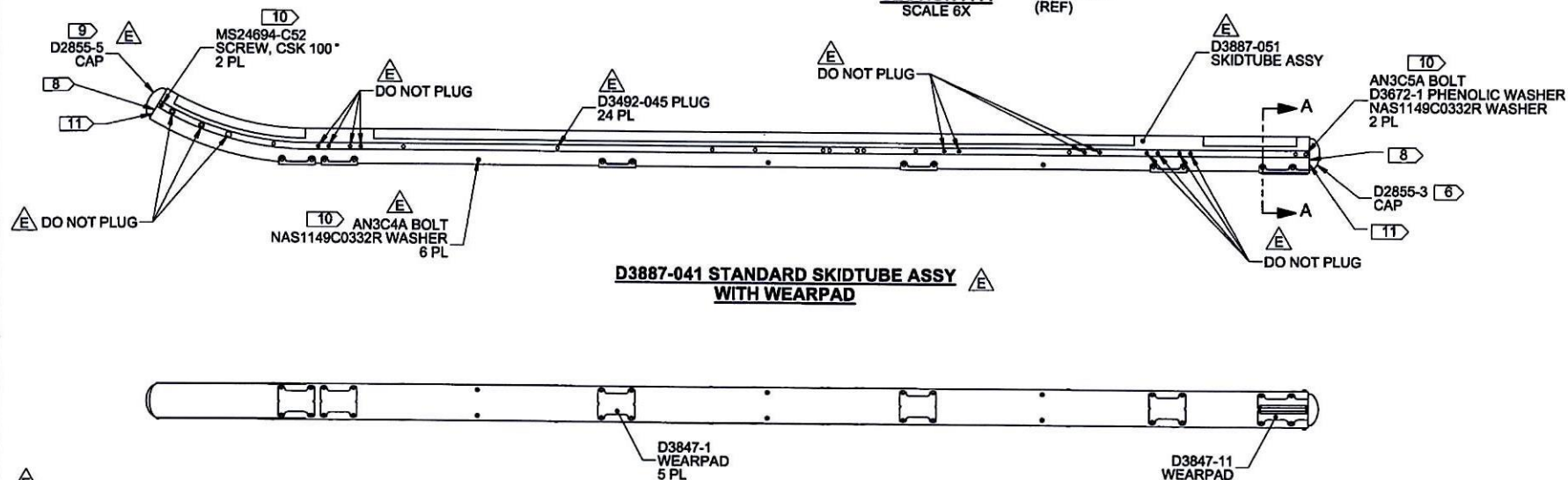
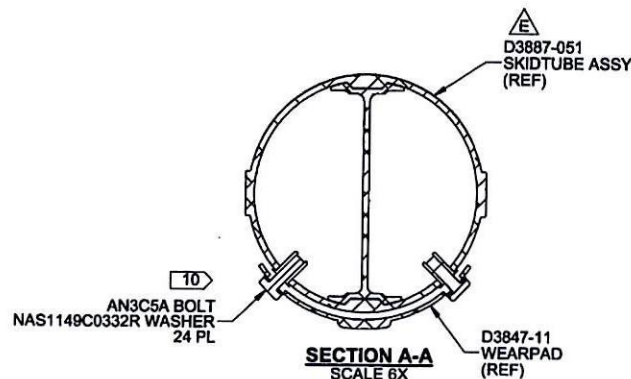
SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 16242 U.S.
170608

RELEASED
2017-05-08
17-519

DATE		17.02.03	
DESIGN	RF	DE APPR.	DS
DRAWN	WK	APPROVED	HS
CHECKED	RF	MFG. APPR.	DD
DRAWING NO.	D3887		
REV. E	SHEET 1 OF 11		
DART AEROSPACE USA, INC.			
EUGENE, OR			
TITLE			
A119 STD SKIDTUBE ASSY			
SCALE			
NTS			
COPYRIGHT © 2008 BY DART AEROSPACE USA, INC.			
THIS DOCUMENT IS UNCLASSIFIED AND IS RELEASED ON THE EXCEPTED CATEGORY THAT IT IS NOT TO BE RELEASED FOR ANY PURPOSES OR COMMERCIAL OR OTHER PURPOSES WITHOUT THE WRITTEN PERMISSION OF DART AEROSPACE USA, INC.			

REV.	DESCRIPTION	DATE
A	NEW ISSUE	09.03.30
B	REVISED NOTE IN (ZN B3-7) C2-1, Ø0.313 WAS Ø0.328 (ZN C4-5, C4-6, C2-7 & B3-7) ANCSA WAS ANCSA (ZN C8-2, C2-2, C8-3, C2-3, C8-4) WAS D2575 (ZN D4-1, C7-2, C2-2, C7-3, C2-3, C7-4, C2-4) ADD D78931 (ZN A8-1), ADD 134.04 (ZN C4-8), D2855-3 AL54-1032-130 WAS A155-1032-130 (ZN C4-1, C5-7, C3-7) D2579 CROSS BOLT SPACER (ZN D4-1, A8-7)	08.06.30
C	ADDED DETAIL F (ZN C8-5, C8-6, B8-7), ADD ITEM 10, C1-6, B4-7) Ø0.201 CSK Ø0.385 X 100" WAS Ø0.214 THRU, ITEM 46, MS24694-C52 WAS ANCSA, 2 PLCS (ZN C1-5, ITEM 42, QTY 32 WAS 34, ITEM 44, QTY 30 WAS 32, ADD (SHIT, PL, ZN C2-2, C2-2, QTY 15, QTY 2 WAS 4, 116.8 (ZN D5-8), DELETE GASKETS (BOM, SH 2)	13.02.19
D	REVISED BEND TOLERANCES FOR MANUFACTURABILITY, 135.07 WAS 134.04 (ZN D5-8), ADD 5.07 (ZN C2-8), ADD	13.09.20
E	COMPLETE REDRAW, ADDED ASSY DETAILS -3, DETAIL F, REF PART 17-577 INSTALLATION OF THE D119-646-313/314 SKIDTUBE PROTECTOR KIT, REF PART 17-577 CHANGE QTY OF D2855-3, ADDED D2855-3 CAP ASSEMBLY, ADDED INSTRUCTIONS TO LOCATE INSERT HOLE FOR D2855-3 CAP, REF PART 17-583	17.02.03

ITEM	QTY	P/N	DESCRIPTION
	X	D3887-041	STANDARD SKIDTUBE ASSY WITH WEARPAD
1	1	D2855-3	CAP ASSY
2	1	D2855-5	CAP ASSY
3	24	D3492-045	PLUG ASSY
4	2	D3672-1	PHENOLIC WASHER
5	5	D3847-1	WEARPAD
6	1	D3847-11	WEARPAD
7	1	D3887-051	SKIDTUBE ASSY
8	1	ALS4-1032-225	INSERT
9	26	AN3C5A	BOLT
10	6	AN3C4A	BOLT
11	2	MS24694-C52	SCREW, CSK 100°
12	32	NAS1149C0332R	WASHER



NOTES:

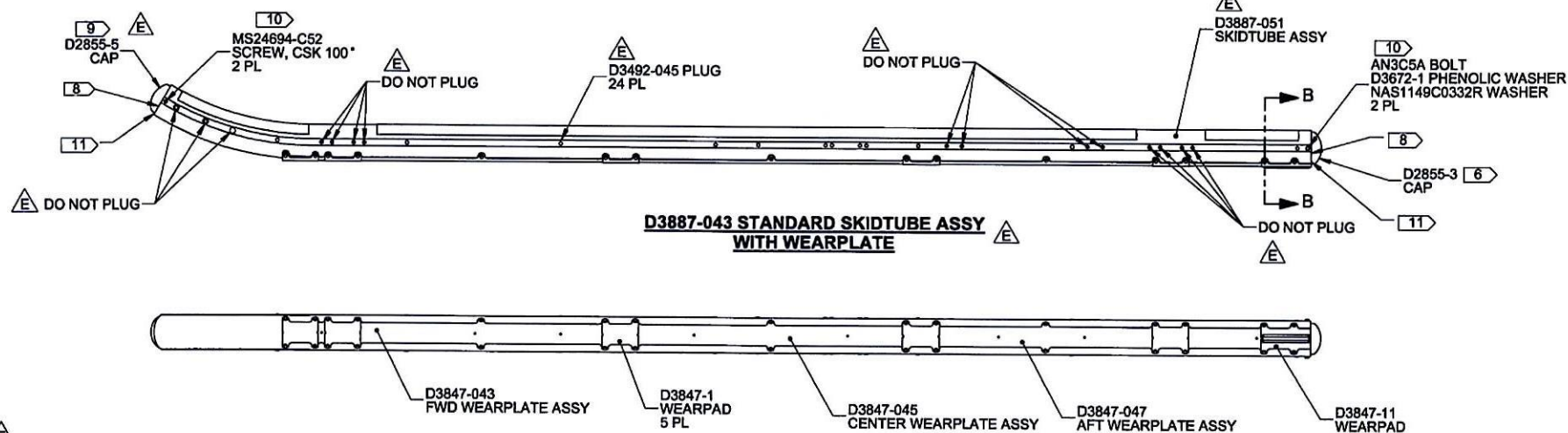
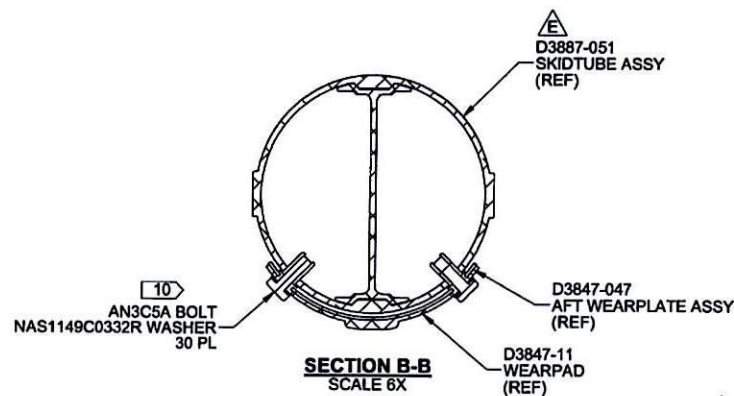
- 1) MATERIAL: N/A
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: IDENTIFY WITH DART P/N "D3887-041" AND BATCH NUMBER PER QSI 044 6.4 ON THE ID OF THE TUBE, BEFORE INSTALLING THE AFT D2855-3 CAP
- 7) WEIGHT: 32.0 lbs
- 8) RELIEVE INNER RIDGE OF EXTRUSION, AS NEEDED, TO ALLOW FOR INSTALLATION OF D2855-3 AND D2855-5 CAP ASSY, ALODINE BARE MATERIAL
- 9) USE D3887-051 SKIDTUBE ASSY TO LOCATE AND BACKDRILL UNDRILLED INSERT HOLE INTO D2855-5 CAP. OPEN HOLE TO Ø0.297, ALODINE BARE MATERIAL AND INSTALL ALS4-1032-225 (OR AKS7-1032-225, OR ALS7-1032-225, OR AKS4-1032-225) INSERT ON INSIDE OF CAP.
- 10) SEAL FASTENERS WITH SIKAFLEX -241/-291 OR PROSEAL 890 OR MIL-S-8802 CLASS B2 SEALANT
- 11) SEAL MATING SURFACES WITH SIKAFLEX -241/-291 OR PROSEAL 890 OR MIL-S-8802 CLASS B2 SEALANT

RELEASED
2017-05-08

APPROVED

DESIGN	RF	DART AEROSPACE USA, INC.	
DRAWN	WK	EUGENE, OR	
CHECKED	RF	DRAWING NO.	REV. E
MFG. APPR.	DD	D3887	SHEET 2 OF 11
APPROVED	HS	TITLE	SCALE
DE APPR.	DS	A119 STD SKIDTUBE ASSY	NTS
DATE	17.02.03	COPYRIGHT © 2008 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	

ITEM	QTY	P/N	DESCRIPTION
	X	D3887-043	STANDARD SKIDTUBE ASSY WITH WEARPLATE
1	1	D2855-3	CAP ASSY
2	1	D2855-5	CAP ASSY
3	24	D3492-045	PLUG ASSY
4	2	D3672-1	PHENOLIC WASHER
5	1	D3847-043	FWD WEARPLATE ASSY
6	1	D3847-045	CENTER WEARPLATE ASSY
7	1	D3847-047	AFT WEARPLATE ASSY
8	5	D3847-1	WEARPAD
9	1	D3847-11	WEARPAD
10	1	D3887-051	SKIDTUBE ASSY
11	1	ALS4-1032-225	INSERT
12	32	AN3C5A	BOLT
13	2	MS24694-C52	SCREW, CSK 100°
14	32	NAS1149C0332R	WASHER



NOTES:

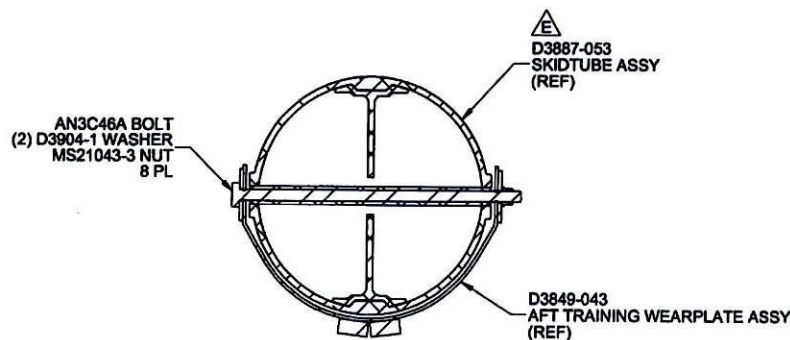
- 1) MATERIAL: N/A
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: IDENTIFY WITH DART P/N "D3887-043" AND BATCH NUMBER PER QSI 044 6.4 ON THE ID OF THE TUBE, BEFORE INSTALLING THE AFT D2855-3 CAP
- 7) WEIGHT: 37.0 lbs
- 8) RELIEVE INNER RIDGE OF EXTRUSION, AS NEEDED, TO ALLOW FOR INSTALLATION OF D2855-3 AND D2855-5 CAP ASSY, ALODINE BARE MATERIAL
- 9) USE D3887-051 SKIDTUBE ASSY TO LOCATE AND BACKDRILL UNDRILLED INSERT HOLE INTO D2855-5 CAP. OPEN HOLE TO Ø0.297, ALODINE BARE MATERIAL AND INSTALL ALS4-1032-225 (OR AKS7-1032-225, OR ALS7-1032-225, OR AKS4-1032-225) INSERT ON INSIDE OF CAP.
- 10) SEAL FASTENERS WITH SIKAFLEX -241/-291 OR PROSEAL 890 OR MIL-S-8802 CLASS B2 SEALANT
- 11) SEAL MATING SURFACES WITH SIKAFLEX -241/291 OR PROSEAL 890 OR MIL-S-8802 CLASS B2 SEALANT

RELEASED
2017-05-08

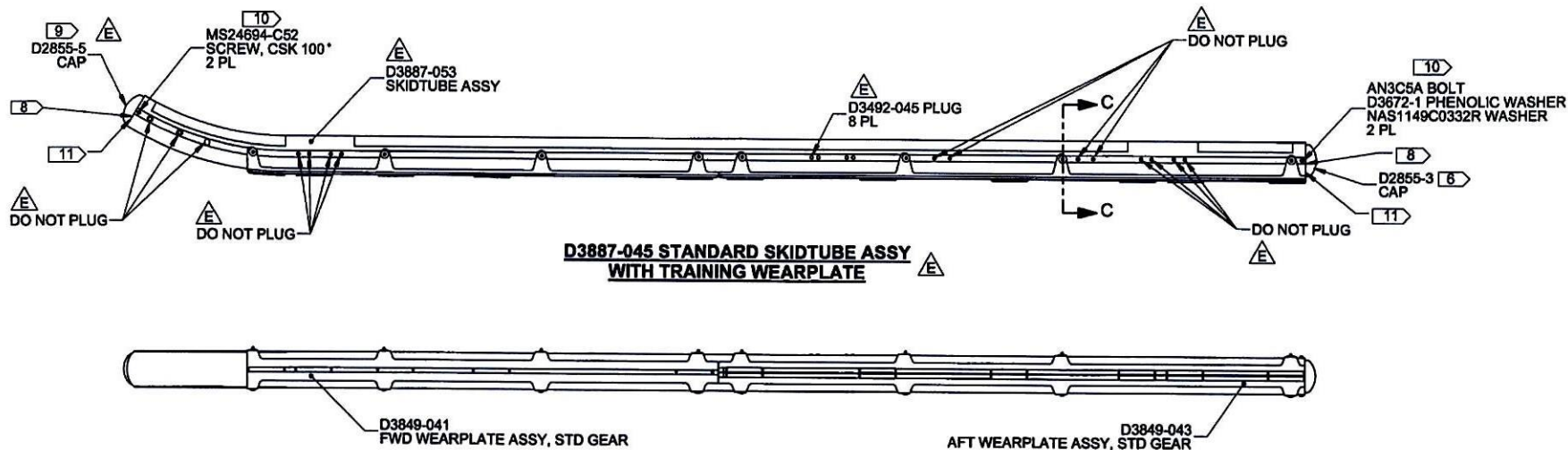
APPROVED

DESIGN	RF	DART AEROSPACE USA, INC.	
DRAWN	WK	EUGENE, OR	
CHECKED	RF	DRAWING NO.	REV. E
MFG. APPR.	DD	D3887	SHEET 3 OF 11
APPROVED	HS	TITLE	SCALE
DE APPR.	DS	A119 STD SKIDTUBE ASSY	NTS
DATE	17.02.03	COPYRIGHT © 2009 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	

ITEM	QTY	P/N	DESCRIPTION
	X	D3887-045	STANDARD SKIDTUBE ASSY WITH TRAINING WEARPLATE
1	1	D2855-3	CAP ASSY
2	1	D2855-5	CAP ASSY
3	8	D3492-045	PLUG
4	2	D3672-1	PHENOLIC WASHER
5	1	D3849-041	FWD WEARPLATE ASSY, STD GEAR
6	1	D3849-043	AFT WEARPLATE ASSY, STD GEAR
7	1	D3887-053	SKIDTUBE ASSY
8	16	D3904-1	WASHER
9	1	ALS4-1032-225	INSERT
10	8	AN3C46A	BOLT
11	2	AN3C5A	BOLT
12	8	MS21043-3	NUT, SELF-LOCKING
13	2	MS24694-C52	SCREW, CSK 100°
14	2	NAS1149C0332R	WASHER



SECTION C-C
SCALE 4X



NOTES:

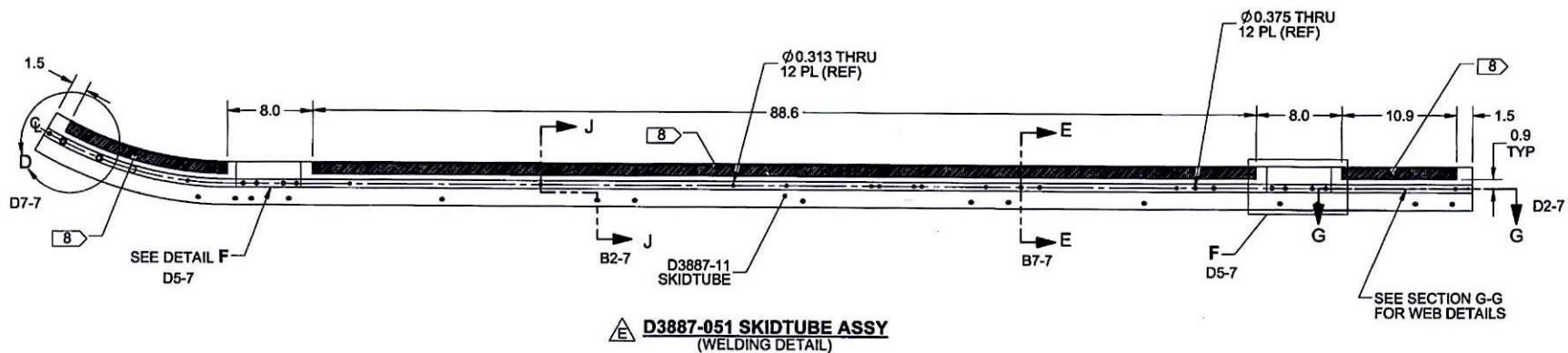
- 1) MATERIAL: N/A
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: IDENTIFY WITH DART P/N "D3887-045" AND BATCH NUMBER PER QSI 044 6.4 ON THE ID OF THE TUBE, BEFORE INSTALLING THE AFT D2855-3 CAP
- 7) WEIGHT: 38.1 lbs
- 8) RELIEVE INNER RIDGE OF EXTRUSION, AS NEEDED, TO ALLOW FOR INSTALLATION OF D2855-3 AND D2855-5 CAP ASSY, ALODINE BARE MATERIAL
- 9) USE D3887-053 SKIDTUBE ASSY TO LOCATE AND BACKDRILL UNDRILLED INSERT HOLE INTO D2855-5 CAP. OPEN HOLE TO Ø0.297, ALODINE BARE MATERIAL AND INSTALL ALS4-1032-225 (OR AKS7-1032-225, OR ALS7-1032-225, OR AKS4-1032-225) INSERT ON INSIDE OF CAP.
- 10) SEAL FASTENERS WITH SIKAFLEX -241/-291 OR PROSEAL 890 OR MIL-S-8802 CLASS B2 SEALANT
- 11) SEAL MATING SURFACES WITH SIKAFLEX -241/291 OR PROSEAL 890 OR MIL-S-8802 CLASS B2 SEALANT

RELEASED
2017-05-08

APPROVED

DESIGN	RF	DART AEROSPACE USA, INC.	
DRAWN	WK	EUGENE, OR	
CHECKED	RF	DRAWING NO.	REV. E
MFG. APPR.	DD	D3887	SHEET 4 OF 11
APPROVED	HS	TITLE	SCALE
DE APPR.	DS	A119 STD SKIDTUBE ASSY	NTS
DATE	17.02.03	COPYRIGHT © 2009 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS UNCLASSIFIED AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	

ITEM	QTY -051	P/N	DESCRIPTION
	X	D3887-051	SKIDTUBE ASSY
1	2	D2579	CROSS BOLT SPACER
2	12	D3681-1	CROSS BOLT SPACER
3	1	D3885-1	STANDARD WEB
4	1	D3887-11	SKIDTUBE
5	12	D3903-1	CROSS BOLT SPACER
6	30	ALS4-1032-130	INSERT



D3887-051 SKIDTUBE ASSY
(WELDING DETAIL)

NOTES:

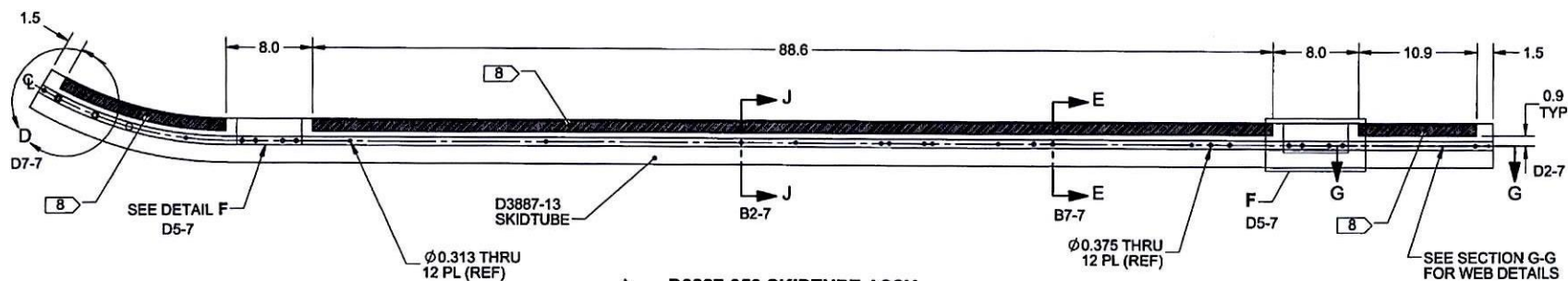
- 1) MATERIAL: N/A
- 2) FINISH: POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: IDENTIFY AT NEXT ASSEMBLY
- 7) WEIGHT: N/A
- 8) AFTER APPLICATION OF FINISH, PAINT TOP SURFACE OF SKIDTUBE WITH MIL-W-5044 ANTI-SKID PAINT (WING WALK) AS INDICATED TO 0.50 ABOVE LOCATION RIDGE, PER QSI 005 SECTION 4.4

RELEASED
2017-05-08

APPROVED

DESIGN	RF	DART AEROSPACE USA, INC.	
DRAWN	WK	EUGENE, OR	
CHECKED	RF	DRAWING NO.	REV. E
MFG. APPR.	DD	D3887	SHEET 5 OF 11
APPROVED	HS	TITLE	SCALE
DE APPR.	DS	A119 STD SKIDTUBE ASSY	NTS
DATE	17.02.03	COPYRIGHT © 2009 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	

ITEM	QTY	P/N	DESCRIPTION
	X	D3887-053	SKIDTUBE ASSY
1	2	D2579	CROSS BOLT SPACER
2	12	D3881-1	CROSS BOLT SPACER
3	1	D3885-1	STANDARD WEB
4	1	D3887-13	SKIDTUBE
5	12	D3903-1	CROSS BOLT SPACER



D3887-053 SKIDTUBE ASSY
(WELDING DETAIL)

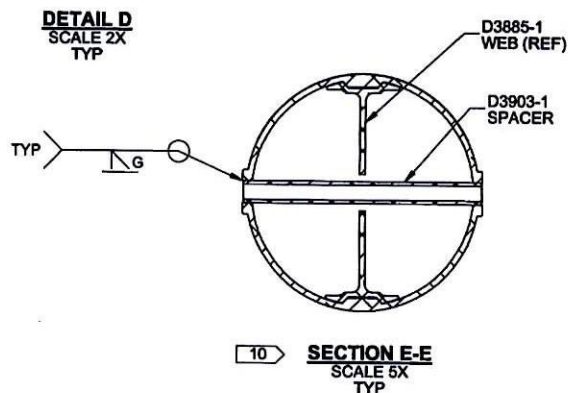
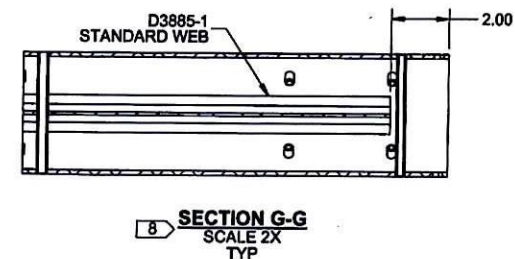
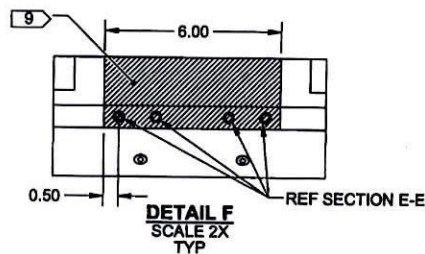
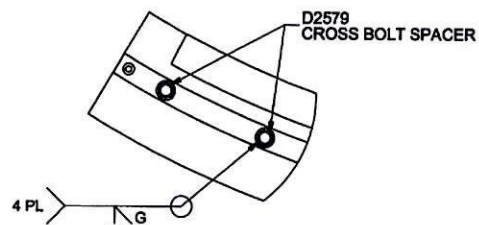
NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: IDENTIFY AT NEXT ASSEMBLY
- 7) WEIGHT: N/A
- 8) AFTER APPLICATION OF FINISH, PAINT TOP SURFACE OF SKIDTUBE WITH MIL-W-5044 ANTI-SKID PAINT (WING WALK) AS INDICATED TO 0.50 ABOVE LOCATION RIDGE, PER QSI 005 SECTION 4.4

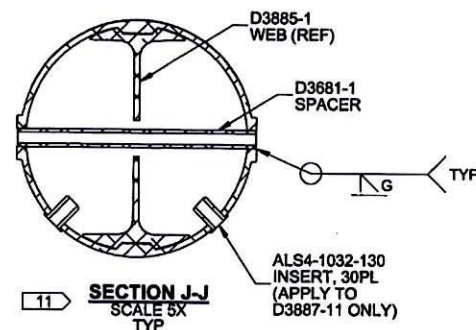
RELEASED
2017-05-08

APPROVED

DESIGN	RF	DART AEROSPACE USA, INC. EUGENE, OR	
DRAWN	WK		
CHECKED	RF	DRAWING NO.	REV. E
MFG. APPR.	DD	D3887	SHEET 6 OF 11
APPROVED	HS	TITLE	SCALE
DE APPR.	DS	A119 STD SKIDTUBE ASSY	NTS
DATE	17.02.03	COPYRIGHT © 2009 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	



(FOR 12X $\phi 0.375$ HOLES PER SKIDTUBE)



(FOR 12X $\phi 0.313$ HOLES PER SKIDTUBE)

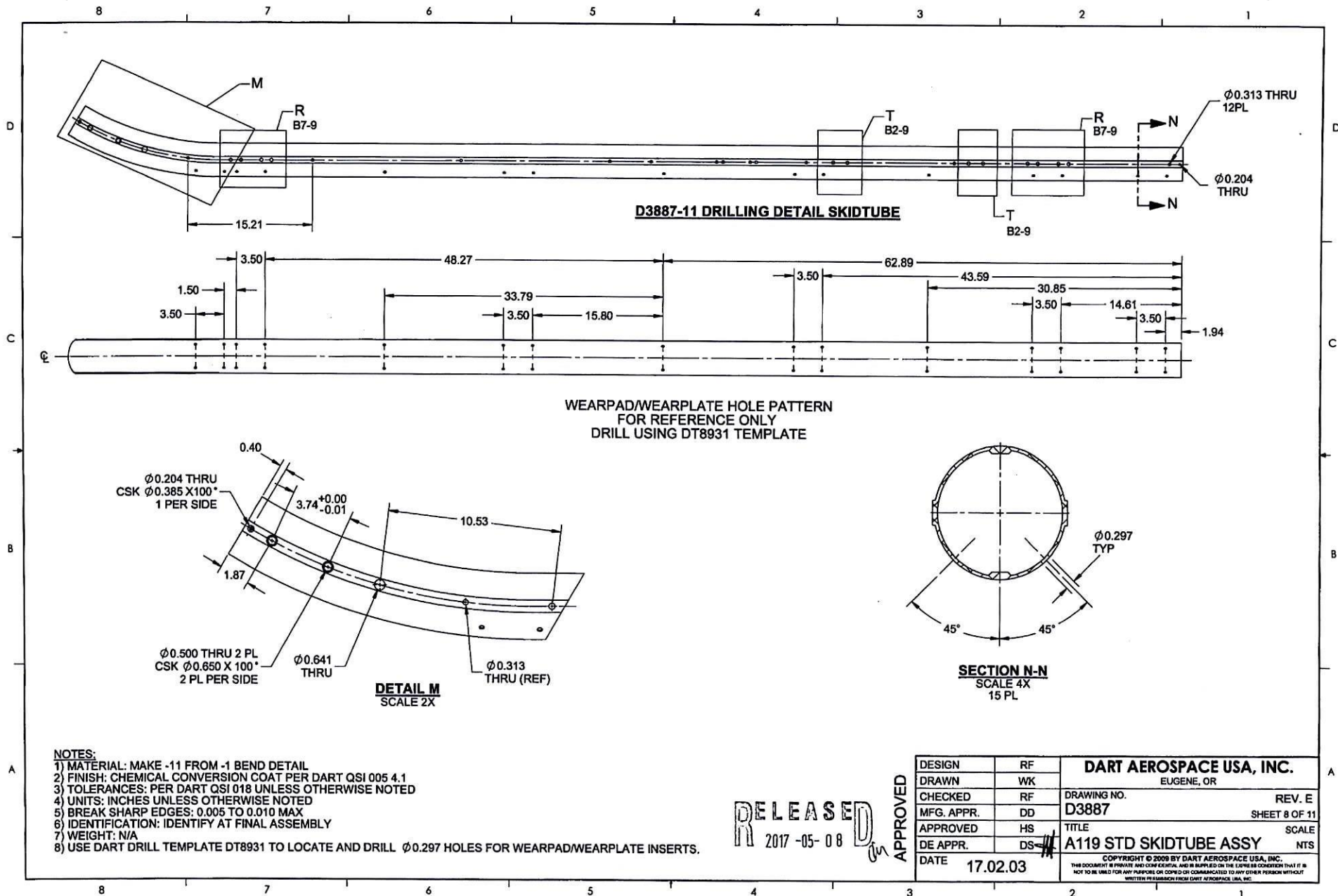
NOTES:

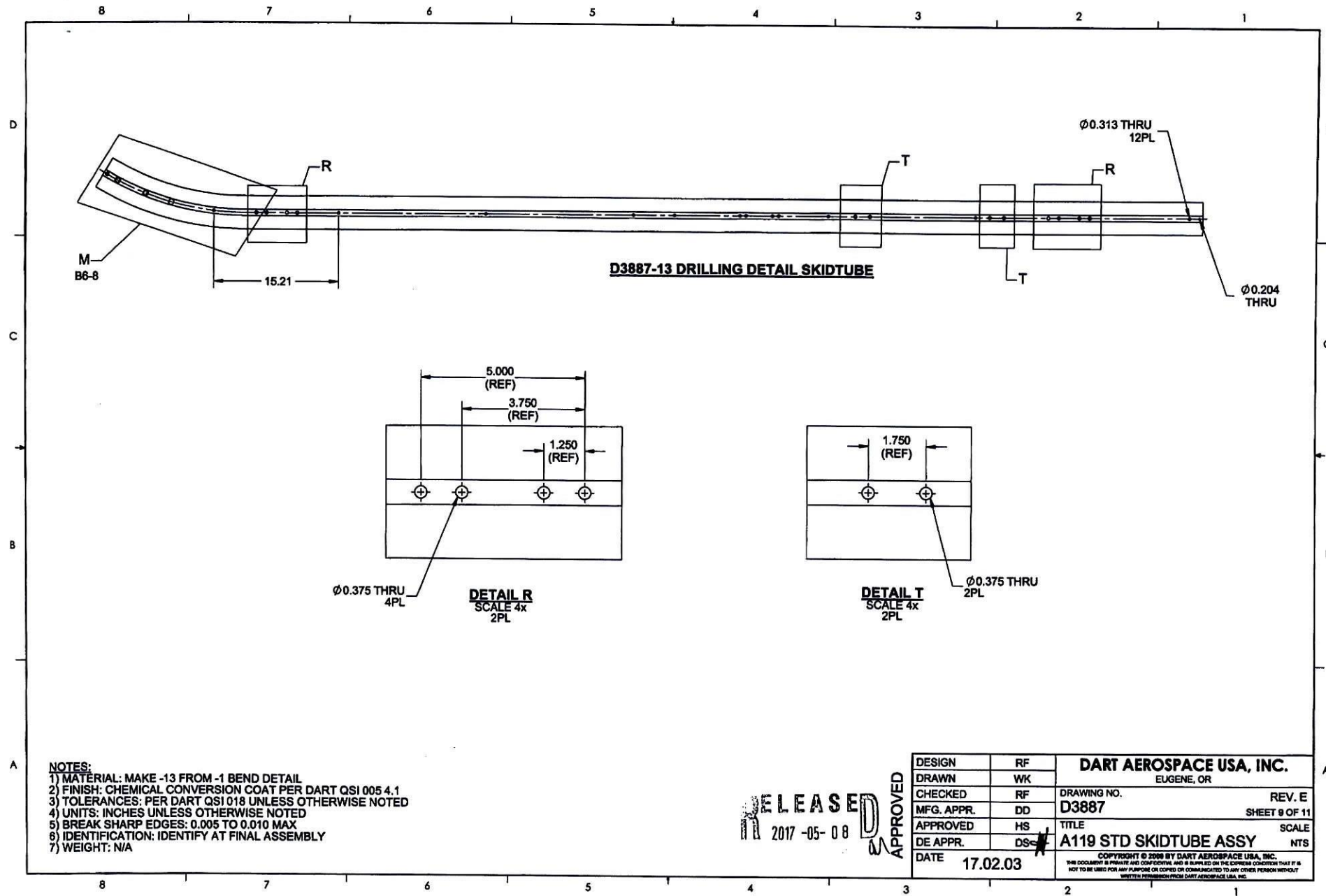
- 1) MATERIAL: N/A
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY AT FINAL ASSEMBLY
- 7) WEIGHT: N/A
- 8) INSERT D3885-1 WEB TO LOCATION SHOWN OFF AFT END OF SKIDTUBE AND BOND WEB INTO OUTER TUBE WITH SIKAFLEX-241/-291 ADHESIVE PER DART QSI 015 AFTER BENDING. ENSURE HOLES LINE-UP
- 9) MASK THIS AREA AND DO NOT POWDER COAT
- 10) AFTER DRILLING AND BENDING ASSEMBLY, PERFORM THE FOLLOWING FOR THE SECTION E-E $\phi 0.375$ HOLES ONLY:
 - i) CHAMFER HOLES $\phi 0.475 \times 45^\circ$
 - ii) INSERT D3903-1 SPACER
 - iii) WELD INTO PLACE AND GRIND FLUSH
 - iv) C'BORE TO $\phi 0.313 \times 0.75$ DEEP
 - v) DEBURR HOLES
- 11) AFTER DRILLING AND BENDING ASSEMBLY, PERFORM THE FOLLOWING FOR THE SECTION J-J $\phi 0.313$ HOLES ONLY:
 - i) CHAMFER HOLES $\phi 0.354 \times 45^\circ$ OR 0.050 DEEP $\times 45^\circ$ (BOTH SIDES)
 - ii) INSERT D3681-1 SPACER
 - iii) WELD INTO PLACE AND GRIND FLUSH
 - iv) DEBURR HOLES
- 12) WELD PER DART QSI 004

RELEASED
2017-05-08

APPROVED

DESIGN	RF	DART AEROSPACE USA, INC.	
DRAWN	WK	EUGENE, OR	
CHECKED	RF	DRAWING NO.	REV. E
MFG. APPR.	DD	D3887	SHEET 7 OF 11
APPROVED	HS	TITLE	SCALE
DE APPR.	DS	A119 STD SKIDTUBE ASSY	NTS
DATE	17.02.03	COPYRIGHT © 2009 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL, AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	





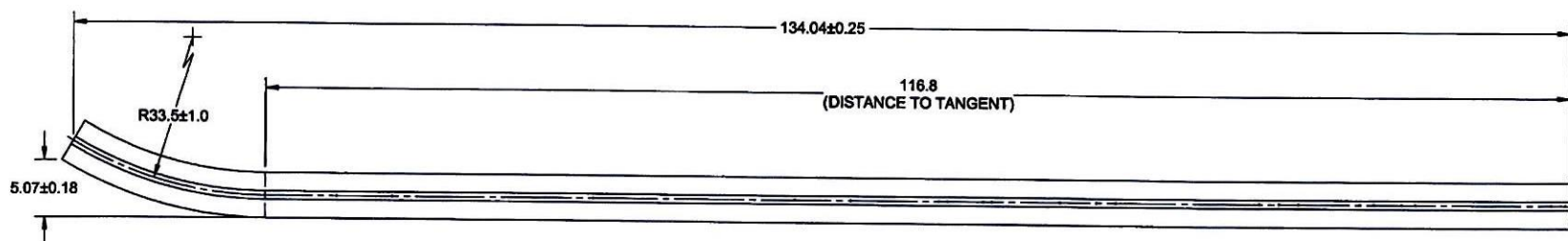
NOTES:

- 1) MATERIAL: MAKE -13 FROM -1 BEND DETAIL
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY AT FINAL ASSEMBLY
- 7) WEIGHT: N/A

RELEASED
2017-05-08

APPROVED

DESIGN	RF	DART AEROSPACE USA, INC.	
DRAWN	WK	EUGENE, OR	
CHECKED	RF	DRAWING NO.	REV. E
MFG. APPR.	DD	D3887	SHEET 9 OF 11
APPROVED	HS	TITLE	SCALE
DE APPR.	DS	A119 STD SKIDTUBE ASSY	NTS
DATE	17.02.03	COPYRIGHT © 2008 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS UNDERSTANDING THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	



D3887-1 BEND DETAIL SKIDTUBE

NOTES:

- 1) MATERIAL: MAKE -1 BEND DETAIL FROM -3 PILOT HOLE DETAIL
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY AT FINAL ASSEMBLY
- 7) WEIGHT: N/A
- 8) DAMAGE TOLERANCE ON FWD BEND:
THERE SHOULD BE NO VISIBLE WRINKLES IN THE BEND FROM THE GROUND TO A HEIGHT OF 8.5 INCHES ABOVE THE GROUND. IT IS ACCEPTABLE TO POLISH OUT GOUGES UP TO 0.020" DEEP IN THE BENT PORTION OF THE TUBE. A MAXIMUM REDUCTION IN DIAMETER OF 0.150" IS ACCEPTABLE IN THE BENT PORTION OF THE TUBE.

RELEASE
2017-05-08

APPROVED

DESIGN	RF	DART AEROSPACE USA, INC.	
DRAWN	WK	EUGENE, OR	
CHECKED	RF	DRAWING NO.	REV. E
MFG. APPR.	DD	D3887	SHEET 10 OF 11
APPROVED	HS	TITLE	SCALE
DE APPR.	DS	A119 STD SKIDTUBE ASSY	NTS
DATE	17.02.03	COPYRIGHT © 2009 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	

